

## VPDES PERMIT FACT SHEET

This document gives pertinent information concerning the reissuance of the VPDES permit listed below. This permit is being processed as a Minor, Municipal permit. The effluent limitations contained in this permit will maintain the Water Quality Standards of 9 VAC 25-260 et seq. The discharge results from the operation of a wastewater treatment facility that serves the town and surrounding commercial area. This permit action consists of adding an additional flow tier for a proposed 0.060 MGD facility, updating Part I limitations, monitoring requirements and special conditions.

1. Facility Name and Address: Stony Creek WWTF  
12521 Setzer Road  
Stony Creek, VA 23882  
  
SIC Code: 4952
2. Permit No. VA0062669  
Existing Permit Expiration Date: 5/5/2016
3. Owner Contact: Name: Frank H. Irving, Sussex Service Authority  
Title: Executive Director  
Telephone No: (804) 834-8930  
Address: 4385 Beef Steak Road  
Waverly, VA 23890
4. Application Complete Date: 8/24/2015  
Permit Drafted By: Adam Eller Date: 3/24/2016  
Piedmont Regional Office  
Reviewed By: Shawn Weimer Date: 3/30/2016  
Emilee Adamson Date: 4/1/2016  
Public Comment Period Dates: 5/25/2016 – 6/27/2016
5. Receiving Stream Name: Stony Creek  
River Mile: 5ASTO001.10  
Basin: Chowan and Dismal Swamp  
Subbasin: Chowan River  
Section: 2b  
Class: III  
Special Standards: None  
  
7-Day, 10-Year Low Flow (7Q10): 0.28 MGD  
1-Day, 10-Year Low Flow (1Q10): 0.23 MGD  
30-Day, 5-Year Low Flow (30Q5): 1.5 MGD  
30-Day, 10-Year Low Flow (30Q10): 0.72 MGD  
7Q10 High Flow Months\*: 19 MGD  
1Q10 High Flow Months\*: 15 MGD  
30Q10 High Flow Months\*: 35 MGD  
Harmonic Mean Flow (HM): Undefined  
Tidal?: No  
On 303(d) list?: No

\*The high flow months are January through April.

See **Attachment C** for the Flow Frequency Determination / 303(d) Status Memorandum

6. Operator License Requirements: The recommended attendance hours by a licensed operator and the minimum daily hours that the treatment works should be manned by operating staff are contained in the Sewage Collection and Treatment Regulations (SCATS) 9 VAC 25-790-300. A Class 3 licensed operator is required for the facility.
7. Reliability Class: Reliability is a measurement of the ability of a component or system to perform its designated function without failure or interruption of service. The reliability classification is based on the water quality and public health consequences of a component or system failure. The permittee is required to maintain Class II Reliability for the existing facility.
8. Permit Characterization:  
☐ Private      ☐ Federal      ☐ State      ☒ POTW      ☐ PVOTW  
☐ Possible Interstate Effect      ☐ Interim Limits in Other Document

9. Table 1: Wastewater Flow and Treatment

OUTFALL NUMBER	DISCHARGE SOURCE	TREATMENT	FLOW
001	90% residential domestic sources and 10% non-domestic/commercial sources (including two hotels, travel plaza and five restaurants)	Mechanical screening, two-stage aerated lagoon, screening, chlorination, dechlorination and cascade step aeration	0.040 MGD
001	90% residential domestic sources and 10% non-domestic/commercial sources (including two hotels, travel plaza and five restaurants)	Type of treatment has not yet been determined	0.060 MGD (upon issuance of a CTO)

See **Attachment B** - Plant Flow Diagram

10. Sewage Sludge Use or Disposal: The treatment system consists of two lagoons that operate in series. Sludge levels in the lagoons are checked periodically (typically twice per year) by the operators and visual observations are recorded by staff. The lagoon sludge has never reached levels that would require removal; however, if needed, sludge will be disposed of via pump-and-haul (using VA-40) to Black Swamp Wastewater Treatment Facility (in Waverly, VA; VPDES No. VA0088978). The transported sludge will be aerobically digested and dewatered via centrifuge. The dewatered sludge will then be hauled to a landfill for final disposal.
11. Discharge Location Description: This facility discharges to Stony Creek. Name of USGS topographic map: Stony Creek Quad (039B). See **Attachment A**.
12. Material Storage: Chlorination and dechlorination (sodium sulfite) tablets are stored in their original containers next to the chlorinator/dechlorinator unit or inside the control building when needed. The storage area is adequately ventilated. See **Attachment G** - Site Visit Report.
13. Ambient Water Quality Information: The Stony Creek WWTF outfall discharges to Stony

Creek at rivermile 5ASTO001.10. Ambient monitoring station 5ASTO001.20 (Stony Creek at Route 301 South bridge) was selected because the discharge outfall is 0.1 mile downstream of this station. Water quality data from this station reflect the ambient water quality of the stream prior to the confluence with the discharge. This data was used to develop the wasteload allocations (see item #15 – Effluent Screening and Limitation Development).

See **Attachment C** for ambient stream data, including Flow Frequency Memorandum, and Stream Sanitation Analysis for the proposed 0.060 MGD facility.

14. 303(d) Listed Segments (TMDL):  
During the 2012 305(b)/303(d) Water Quality Integrated Report, Stony Creek was assessed as a Category 5A waterbody ("A Water Quality Standard is not attained. The water is impaired or threatened for one or more designated uses by a pollutant(s) and requires a TMDL (303(d) list).") The stream is impaired of the Fish Consumption Use due to mercury exceedances in fish tissue. The Aquatic Life and Recreation Uses are fully supporting and the Wildlife Use was not assessed.

In the draft 2014 305(b)/303(d) Water Quality Assessment, Stony Creek remains a Category 5A. The stream is impaired of the Fish Consumption Use due to mercury exceedances in fish tissue. The Aquatic Life, Recreation, and Wildlife Uses are fully supporting. See **Attachment C** for the 2012 303(d) Fact Sheet and the draft 2014 303(d) Fact Sheet for Stony Creek.

The facility's treated effluent has historically not contained measurable concentrations of mercury and is not expected to cause or contribute to the mercury impairment.

The facility is not addressed in any currently-approved TMDL. The facility does not discharge into the Chesapeake Bay Watershed; therefore, it is not included in the Chesapeake Bay TMDL.

15. Antidegradation Review & Comments: Tier 1   X   Tier 2        Tier 3

The State Water Control Board's Water Quality Standards includes an antidegradation policy (9 VAC 25-260-30). All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The antidegradation review begins with a Tier determination. Stony Creek is determined to be a Tier 1 waterbody. This determination is based on a listing on the 2004 Total Maximum Daily Load (TMDL) Priority list as impaired of the Aquatic Life use support goal due to pH violations and of the Recreation Use due to fecal coliform violations. The violations occurred at the Route 301 bridge. Stony Creek was delisted in the 2006 cycle but remains a Tier 1 water.

16. Site Visit Date: 3/24/2016 Performed by: Adam Eller

See **Attachment G** – Site Visit Report

17. Effluent Screening & Limitation Development:

See **Attachment C** for ambient monitoring station 5ASTO001.20 data, 1989 and 2004 Stream Sanitation Analyses and the 2015 Flow Frequency Memorandum. **Attachment D** for the facility's effluent data, including sampling results provided on monthly DMRs, the 2015 application (EPA Form 2A) and the 2012 Attachment A Water Quality Criteria Monitoring form. See **Attachment E** for additional limitations evaluation data, including MSTRANTI Data Source Report, and printouts of the MSTRANTI (Version 2) and STATS.exe (version 2.04).

Table 2: Water-quality Based Limitations Evaluation Summary

FLOW (MGD)	PARAMETER	WLAa	WLAc	HH	PWS HH	INPUT	LIMIT
0.040	Copper, dissolved (µg/L)	27	23	NA	NA	5	No
0.060	Copper, dissolved (µg/L)	20	17	NA	NA	5	No
0.040	Nickel, dissolved (µg/L)	410	53	180,000	NA	2.4	No
0.060	Nickel, dissolved (µg/L)	310	39	120,000	NA	2.4	No
0.040	Zinc, dissolved (µg/L)	260	310	1,000,000	NA	10	No
0.060	Zinc, dissolved (µg/L)	200	230	680,000	NA	10	No
0.040	Chromium VI, dissolved (µg/L)	110	88	NA	NA	<3 **	No
0.060	Chromium VI, dissolved (µg/L)	77	62	NA	NA	<3 **	No
0.040	Silver, dissolved (µg/L)	2.5	NA	NA	NA	<0.5 **	No
0.060	Silver, dissolved (µg/L)	2.0	NA	NA	NA	<0.5 **	No
0.040	Ammonia (mg/L as NH3-N)	208	53.3	NA	NA	9*	No
0.060	Ammonia (mg/L as NH3-N)	144	36.1	NA	NA	9*	No
0.040	Chlorides (mg/L)	5,800,000	1,800,000	NA	NA	62	No
0.060	Chlorides (mg/L)	4,200,000	1,300,000	NA	NA	62	No
0.040	Chlorine, total residual (µg/L)	130	88	NA	NA	20,000*	<b>Yes</b>
0.060	Chlorine, total residual (µg/L)	92	62	NA	NA	20,000*	<b>Yes</b>

NA = Not Applicable

\*See "Rationale for ammonia and TRC (Additional Information)" below regarding justification for ammonia and TRC inputs.

\*\* Results did not meet the requested QL, so the less than QL value was evaluated as if the pollutant was observed at the QL.

Table 3: Basis for 0.040 MGD Effluent Limitations

PARAMETER	BASIS FOR LIMIT	DISCHARGE LIMITS					
		MONTHLY AVG		WEEKLY AVG		MIN	MAX
001 Flow	NA	NL		NA		NA	NL
002 pH	1, 5	NA		NA		6.0 s.u.	9.0 s.u.
003 BOD <sub>5</sub>	1, 4	30 mg/L	4,500 g/d	45 mg/L	6,800 g/d	NA	NA
004 TSS	1	30 mg/L	4,500 g/d	45 mg/L	6,800 g/d	NA	NA
005 TRC	2	0.064 mg/L		0.079 mg/L		NA	NA
007 DO	4	NA		NA		5.5 mg/L	NA
157 TRC* contact	3	NA		NA		1.0 mg/L	NA
213 TRC* contact	3	NA		NA		0.60 mg/L	NA
120 <i>E.coli</i> (applies when chlorine disinfection is used – Part I.A.1)	5	126 N/100 mL (Geometric Mean)		NA		NA	NA
120 <i>E.coli</i> (applies when alternate disinfection is used – Part I.B.2)	5	126 N/100 mL (Geometric Mean)		NA		NA	NA

NA = Not Applicable

NL = No Limit

(1) Technology-based limits (Federal Effluent Guidelines - 40 CFR 133.102)

(2) Water Quality-based limits (see **Attachment D**)

(3) Best Engineering Judgment (BEJ) (Consistent with 40 CFR 125.3(d) criteria)

(4) 1989 Stream Sanitation Analysis (see **Attachment C** for the 5/3/1989 Stream Sanitation Analysis Memorandum from D.X. Ren).

(5) Virginia Water Quality Standards (9 VAC 25-260-50)

\*157 and 213 TRC samples are taken prior to dechlorination, they are not final effluent (see Part I.B. Additional Chlorine Limitations and Monitoring Requirements).

Table 4: Basis for 0.060 MGD Effluent Limitations

PARAMETER	BASIS FOR LIMIT	DISCHARGE LIMITS			
		MONTHLY AVG	WEEKLY AVG	MIN	MAX

001 Flow	NA	NL		NA		NA	NL
002 pH	1, 6	NA		NA		6.0 s.u.	9.0 s.u.
003 cBOD <sub>5</sub>	5	15 mg/L	3,400 g/d	20 mg/L	4,500 g/d	NA	NA
004 TSS	1	30 mg/L	6,800 g/d	45 mg/L	10,000 g/d	NA	NA
005 TRC	2	0.042 mg/L		0.047 mg/L		NA	NA
007 DO	4	NA		NA		5.0 mg/L	NA
068 TKN	5	8 mg/L	1,800 g/d	12 mg/L	2,700 g/d	NA	NA
157 TRC* contact	3	NA		NA		1.0 mg/L	NA
213 TRC* contact	3	NA		NA		0.60 mg/L	NA
120 <i>E.coli</i> (applies when chlorine disinfection is used – Part I.A.6)	6	126 N/100 mL (Geometric Mean)		NA		NA	NA
120 <i>E.coli</i> (applies when alternate disinfection is used – Part I.B.4)	6	126 N/100 mL (Geometric Mean)		NA		NA	NA

NA = Not Applicable

NL = No Limit

- (1) Technology-based limits (Federal Effluent Guidelines – 40 CFR 133.102)
- (2) Water Quality-based limits (see **Attachment D**)
- (3) Best Engineering Judgment (BEJ) (Consistent with 40 CFR 125.3(d) criteria)
- (4) 1989 Stream Sanitation Analysis (see **Attachment C** for the 5/3/1989 Stream Sanitation Analysis Memorandum from D.X. Ren).
- (5) 2004 Stream Sanitation Analysis (see **Attachment C** for the 4/29/2004 Stream Sanitation Analysis Memorandum from J. Palmore).
- (6) Virginia Water Quality Standards (9 VAC 25-260-50)

\*157 and 213 TRC samples are taken prior to dechlorination, they are not final effluent (see Part I.B. Additional Chlorine Limitations and Monitoring Requirements).

• **Rationale for pH and DO (Additional Information):**

The pH and Dissolved Oxygen (DO) criteria in 9 VAC 25-260-50 require a minimum pH of 6.0, a maximum pH of 9.0, an instantaneous minimum DO of 4.0 mg/L and a daily average DO of 5.0 mg/L for Class III water bodies within the Coastal and Piedmont Zones. The existing pH (6.0-9.0 s.u.) and DO (5.5 mg/L instantaneous minimum) limitations adequately address these criteria and will be carried forward in the 2016 permit for the 0.040 MGD facility. The existing minimum and maximum limitations for pH are the same limitations for the proposed 0.060 MGD facility. The 2004 Stream Sanitation Analysis recommended a DO minimum of 5 mg/L for the 0.060 MGD facility and this limitation is, therefore, included in the permit for the 0.060 MGD facility. Although this 5.0 mg/L DO minimum limitation is less stringent than the 5.5 mg/L DO minimum limitation assigned to the 0.04 MGD facility, limits may be made less stringent if material and

substantial alterations or additions are made that would justify less stringent limits (as will be the case for the proposed facility expansion/upgrade). See Item # 18 – Antibacksliding Statement for additional information.

- **Rationale for BOD<sub>5</sub> (Additional Information):**

The 2011 permit included BOD<sub>5</sub> limitations based on Secondary Treatment Standards (40 CFR 133.102) and in accordance with the 1989 Stream Sanitation Analysis (see **Attachment C**). These limitations remain protective of water quality and will be carried forward in the 2016 permit for the 0.040 MGD facility. See **Attachment E** for BOD<sub>5</sub> Monthly Average and Weekly Average loading limitations calculations.

- **Rationale for cBOD<sub>5</sub> and TKN (Additional Information):**

The 2004 Stream Sanitation Analysis (see **Attachment C**) included a recommendation that the proposed facility expansion to 0.060 MGD include limits for cBOD<sub>5</sub> and TKN to maintain Water Quality Standards in Stony Creek. These limitations have, therefore, been included in the permit for the proposed 0.060 MGD facility. See **Attachment E** for cBOD<sub>5</sub> Monthly Average and Weekly Average loading limitations calculations.

- **Rationale for TSS (Additional Information):**

The 2011 permit included TSS limitations based on Secondary Treatment Standards (40 CFR 133.102); these limitations remain protective of water quality and will be carried forward in the 2016 permit for the 0.040 MGD facility. TSS limitations based on Secondary Treatment Standards have also been included for the proposed 0.060 MGD facility. See **Attachment E** for TSS Monthly Average and Weekly Average loading limitations calculations.

- **Rationale for ammonia and TRC (Additional Information):**

A limitation evaluation begins by determining chronic and acute WLAs using the MSTRANTI Excel Spreadsheet. MSTRANTI produces WLA's with calculations based on the Virginia Water Quality Standards (9 VAC 25-260 et. seq.) using data inputs for both effluent and receiving stream qualities and flows. Once determined, the chronic and acute WLA's are entered into the STATS.exe computer application along with the appropriate quantification level (QL) and at least one data point for each parameter. The output from the STATS.exe application will indicate the need for a permit limitation and calculate that limitation if needed. For ammonia and TRC, GM00-2011 requires that a concentration of 9 mg/L and 20 mg/L, respectively, be entered into STATS.exe as a data point in order to force the program to produce a limit if the WLAs are low enough that one is needed. Via the abovementioned evaluation procedure, an ammonia limitation was determined to be unnecessary for either of the 0.040 MGD or 0.060 flow tiers. For TRC, a Monthly Average concentration limit of 0.064 mg/L and a Weekly Average concentration limit of 0.079 mg/L were determined to be necessary; these limitations are the same as the existing permit and will be carried forward in the 2016 permit. Additionally, a Monthly Average concentration limit of 0.024 mg/L and a Weekly Average concentration limit of 0.027 mg/L were determined to be necessary for the proposed 0.060 MGD facility and are therefore included in the 2016 permit.

- **Limitations Rationale for *E. coli* (Additional Information):**

*E. coli* data was submitted with the reissuance application; the data are displayed in **Attachment D**. The maximum value reported on EPA Form 2A was 13 MPN/100 mL. DEQ no longer accepts TRC as a surrogate for complying with bacterial Water Quality Standards and is now including bacteria limitations when chlorine disinfection is used. The bacterial Water Quality Standard for Class III freshwaters is in terms of *E. coli*, therefore, a Monthly Geometric Mean limitation of 126 N/100 mL is included for both 0.040 MGD and 0.060 MGD flow tiers to ensure compliance with applicable Water Quality Standards for *E.coli*.

18. **Basis for Sludge Use & Disposal Requirements:**  
Not applicable, as this facility does not land apply sludge. See Item #10 of this Fact Sheet for additional information.
19. **Antibacksliding Statement:**  
The proposed 0.060 MGD facility has been assigned a DO minimum limitation of 5.0 mg/L, which is less stringent than the existing 0.040 MGD facility DO minimum limitation of 5.5 mg/L. Per 9VAC25-31-220.L.2 (Exceptions), reissued permits may contain a less stringent limitation than another comparable effluent limitation in the previous permit if: "Material and substantial alterations or additions to the permitted facility occurred after permit issuance which justifies the application of a less stringent effluent limitation." The facility expansion/upgrade to 0.060 MGD will constitute material and substantial alterations or additions that justify the inclusion of a less stringent DO limitation for the 0.060 MGD flow tier; therefore, backsliding concerns are avoided. All other permit limitations are at least as stringent as in the previous permit.
20. **Special Conditions:**
  - a. **B.1 - 4 : Additional Chlorine Limitations and Monitoring Requirements**  
**Rationale:** Required by Sewage Collection and Treatment Regulations, 9VAC25-790 and Water Quality Standards 9VAC25-260-170, Bacteria; other recreational waters. Also, 40 CFR 122.41(e) requires the permittee, at all times, to properly operate and maintain all facilities and systems of treatment in order to comply with the permit. This ensures proper operation of chlorination equipment to maintain adequate disinfection.
  - b. **C.1: 95% Capacity Reopener**  
**Rationale:** Required by VPDES Permit Regulation, 9VAC25-31-200 B 4 for all POTW and PVOTW permits.
  - c. **C.2: Indirect Dischargers**  
**Rationale:** Required by VPDES Permit Regulation, 9VAC25-31-200 B 1 and B 2 for POTWs and PVOTWs that receive waste from someone other than the owner of the treatment works.
  - d. **C.3: Certificate to Construct and Certificate to Operate Requirement**  
**Rationale:** Required by Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9 VAC 25-790.
  - e. **C.4: Operations and Maintenance Manual Requirement**  
**Rationale:** Required by Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9 VAC 25-790; VPDES Permit Regulation, 9VAC25-31-190 E.
  - f. **C.5: Licensed Operator Requirement**  
**Rationale:** The VPDES Permit Regulation, 9VAC25-31-200 C and the Code of Virginia § 54.1-2300 et seq, Board for Waterworks and Wastewater Works Operators and Onsite Sewage System Professionals Regulations (18VAC160-20-10 et seq.), require licensure of operators.
  - g. **C.6: Reliability Class**  
**Rationale:** Required by Sewage Collection and Treatment Regulations, 9VAC25-790 for all municipal facilities.
  - h. **C.7: Treatment Works Closure Plan**



**Rationale:** Code of Virginia § 62.1-44.19 of the State Water Control Law. This condition establishes the requirement to submit a closure plan for the wastewater treatment facility if the treatment facility is being replaced or is expected to close.

i. **C.8: Sludge Reopener**

**Rationale:** Required by VPDES Permit Regulation, 9VAC25-31-220 C for all permits issued to treatment works treating domestic sewage.

j. **C.9: Reopeners**

**Rationale:** Section 303(d) of the Clean Water Act requires that total maximum daily loads (TMDLs) be developed for streams listed as impaired. This special condition is to allow the permit to be reopened if necessary to bring it into compliance with any applicable TMDL approved for the receiving stream. The re-opener recognizes that, according to section 402(o)(1) of the Clean Water Act, limits and/or conditions may be either more or less stringent than those contained in this permit. Specifically, they can be relaxed if they are the result of a TMDL, basin plan, or other wasteload allocation prepared under section 303 of the Act.

k. **C.10: Water Quality Criteria Monitoring**

**Rationale:** State Water Control Law §62.1-44.21 authorizes the Board to request information needed to determine the discharge's impact on State waters. States are required to review data on discharges to identify actual or potential toxicity problems, or the attainment of water quality goals, according to 40 CFR Part 131, Water Quality Standards, subpart 131.11. To ensure that water quality criteria are maintained, the permittee is required to analyze the facility's effluent for the substances noted in Attachment A of this VPDES permit.

l. **C.11: Water Quality Criteria Reopener**

**Rationale:** VPDES Permit Regulation, 9VAC25-31-220 D requires effluent limitations to be established which will contribute to the attainment or maintenance of water quality criteria.

m. **C.12: Compliance Reporting**

**Rationale:** Authorized by VPDES Permit Regulation, 9VAC25-31-190 J 4 and 220 I. This condition is necessary when pollutants are monitored by the permittee and a maximum level of quantification and/or a specific analytical method is required in order to assess compliance with a permit limit or to compare effluent quality with a numeric criterion. The condition also establishes protocols for calculation of reported values.

n. **C.13: Sludge Use and Disposal**

**Rationale:** VPDES Permit Regulation, 9VAC25-31-100 P; 220 B 2; and 420 through 720, and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on sludge use and disposal practices and to meet specified standards for sludge use and disposal.

o. **C.14: Materials Handling/Storage**

**Rationale:** 9 VAC 25-31-50 A prohibits the discharge of any wastes into State waters unless authorized by permit. Code of Virginia § 62.1-44.16 and 62.1-44.17 authorizes the Board to regulate the discharge of industrial waste or other waste.

p. **C.15: Ground Water Monitoring**

**Rationale:** State Water Control Law § 62.1-44.21 authorizes the Board to request information needed to determine the impact of the discharge on State waters. Ground water monitoring for parameters of concern will indicate whether possible lagoon seepage is resulting in violations of the State Water Control Board's Ground Water Standards.

See **Attachment F** - Groundwater Data Evaluation

**q. C.16: Inflow and Infiltration (I&I) Requirement**

**Rationale:** Best Engineering Judgment based on the history of high flows from the facility. From 5/6/2011 to March of 2016, there were sixteen instances where the facility had reported flow rates on DMRs in excess of 95% of the design capacity for a third consecutive month, triggering the 95% Capacity Reopener special condition. It is reasonable to require the permittee to continue to evaluate and eliminate potential I&I issues until influent flows no longer exceed 95% of the design capacity authorized in this permit for any three consecutive month period during a complete calendar reporting year, or a CTO is issued for the proposed 0.060 MGD facility, whichever occurs first. See **Attachment L**.

**r. C.17: Pretreatment Program**

**Rationale:** VPDES Permit Regulation, 9VAC25-31-730 through 900, and 40 CFR Part 403 require certain existing and new sources of pollution to meet specified regulation.

**s. Part II, Conditions Applicable to All Permits**

**Rationale:** VPDES Permit Regulation, 9VAC25-31-190 requires all VPDES permits to contain or specifically cite the conditions listed.

**21. Changes to Permit:**

Changes to Permit Cover Page:

- Permit effective date and expiration dates changed. The permit expiration date changed to occur on the last day of the month, just shy of a five year term. Change is in accordance with current PRO protocol for VPDES permit terms.
- Facility Name changed from "Stony Creek WWTF" to Stony Creek Wastewater Treatment Facility (WWTF) for clarity.
- "Water Permit Manager" changed to "Planning and Water Permit Manager" to reflect Manager's current job title.

Table 5: Changes to Part I.A Effluent Limits and Monitoring Requirements:

**NOTE:** An additional flow tier of 0.060 MGD was added to Part I.A the 2016 permit at the request of the permittee. Table 5 below addresses the changes applicable to the limitations and monitoring requirements for the 0.040 MGD facility. All limitations and monitoring requirements for the 0.060 MGD facility (see Parts I.A.6-10 and I.B.3-4 of the permit) have been added.

From	To	Item Changed	Reason for Change
I.A.1	I.A.1	"Effluent Limitations and Monitoring Requirements" narrative.	Added narrative requirement that the limitations and monitoring requirements for the 0.040 MGD facility will last until the permit expiration date or upon the issuance of a CTO for the 0.060 MGD facility, whichever occurs first, per GM14-2003.
"BOD <sub>5</sub> "	"Five-Day Biochemical Oxygen Demand (BOD <sub>5</sub> )"	"Effluent Characteristics" for BOD <sub>5</sub>	Added to define BOD <sub>5</sub> parameter.

--	"...(DO)", "...(TRC)" and "...(TSS)"	"Effluent Characteristics" for Dissolved Oxygen, Total Recoverable Chlorine and Total Suspended Solids	Abbreviations for these parameters were added to the 'Effluent Characteristics' for clarity since this is where the respective parameter names first occur within the permit.		
"1/Day"	"1 per Day"	"Monitoring Frequency" descriptions	Rewritten to clarify monitoring frequencies.		
"1/Month"	"1 per Month"	"Monitoring Frequency" descriptions	Rewritten to clarify monitoring frequencies.		
Parameter Changed	Effluent Limit Changed		Monitoring Requirement Changed		Reason for Change
	From	To	From	To	
<i>E. coli</i> (N/100 mL)	<u>Monthly Average:</u> NL;  <u>Weekly Average:</u> NA;  <u>Minimum:</u> NA;  <u>Maximum:</u> NA	<u>Monthly Average:</u> 126 N/100 mL ( <u>Monthly Geometric Mean</u> );  <u>Weekly Average:</u> NA;  <u>Minimum:</u> NA;  <u>Maximum:</u> NA	4/Month;  Grab; (10am-4pm)	4 per Month (Weekly);  Grab; (10am-4pm)	Current DEQ policy is to include <i>E. coli</i> limits for all municipal facilities even when chlorine is the chosen disinfection method. Meeting chlorine limitation requirements is not acceptable as a surrogate for ensuring bacterial Water Quality Standards are met. PRO Staff Decisions 11/13/2014. "Monthly Geometric Mean" was also added to be consistent with the Water Quality Standards and GM14-2003. Monitoring frequency remains at 4 per Month; however, "Weekly" was added in accordance with GM14-2003 and to better clarify the monitoring requirement.
Other Changes to Part I.A (Footnotes):					
From	To	Change		Reason for Change	
I.A.1(b)	I.A.5	Moved footnote		Moved footnote since the requirement applies to all final effluent (as opposed to individual parameters).	
I.A.1(c)	I.A.1(b)	Moved footnote		Renumbering schema change.	
--	I.A.1(c)	Added Footnote "c"		To clarify that there are additional compliance reporting requirements under part I.C.12 of the permit.	

--	I.A.1(d)	Added Footnote "d"	To clarify that there are additional <i>E.coli</i> requirements (when a disinfection method other than chlorine is used) under part I.B.2 of the permit.
--	"4 per Month" = Four samples collected during four separate weeks within a single calendar month.	Added definition	Added to clarify "4 per Month (Weekly)" monitoring requirement.

Table 6: Changes to Part I.B:

From	To	Change	Reason for Change
I.B	I.B	Added flow tier headers	Added headers to clarify which sections of Part I.B apply to the existing 0.040 MGD facility and which sections are effective upon issuance of a CTO for the proposed 0.060 MGD facility.
	I.B.1.c	Added additional language.	Added language to accept <i>E.coli</i> to be sampled within 15 minutes to demonstrate compliance with the disinfection condition, should a given TRC sample not meet the minimum TRC concentration (0.6 mg/L) specified for the outlet(s) of the chlorine contact tank(s).
--	I.B.3-4	Additional chlorine and limitations and monitoring requirements language added for a 0.060 MGD facility (upon issuance of a CTO)	Added due to the inclusion of a 0.060 MGD flow tier. Inclusion of these requirements is consistent with GM14-2003.

Table 7: Changes to Part I.C – Other Requirements or Special Conditions:

From	To	Special Condition Changed	Reason for Change
I.C.1	I.C.1	95% Capacity Reopener	No changes.
I.C.2	I.C.2	Indirect Dischargers	No changes.
I.C.3	I.C.3	CTC, CTO Requirement	Updated language per GM14-2003.
I.C.4	I.C.4	O&M Manual Requirement	Updated language per GM14-2003.

From	To	Special Condition Changed	Reason for Change
I.C.5	I.C.5	Licensed Operator Requirement	No changes.
I.C.6	I.C.6	Reliability Class	No changes.
I.C.7	I.C.7	"Closure Plan" renamed as "Treatment Works Closure Plan"	Updated language per GM14-2003.
I.C.8	I.C.8	Sludge Reopener	No changes.
I.C.9	I.C.9	TMDL Reopener	No Changes.
I.C.10	I.C.10	Water Quality Criteria Monitoring	Language modified to require the Attachment A Water Quality Criteria Monitoring to be submitted within one year (or less) of the issuance of a CTO for the 0.060 MGD facility.
I.C.11	I.C.11	Water Quality Criteria Reopener	No changes.
I.C.12	I.C.12	Compliance Reporting	BOD <sub>5</sub> QL changed from 5 mg/L to 2 mg/L per GM14-2003. Added QLs for cBOD <sub>5</sub> and TKN as these parameters will be monitored upon issuance of a CTO for the 0.060 MGD facility.
I.C.13	I.C.13	Sludge Use and Disposal	No changes.
I.C.14	I.C.14	Materials Storage and Handling	Updated language per GM14-2003.
I.C.15	I.C.15	Ground Water Monitoring	No changes.
I.C.16	I.C.16	Inflow and Infiltration (I&I) Study	Condition name changed to 'Inflow and Infiltration (I&I) Requirement'. Language modified; requirement for submittal of an approvable I&I corrective action plan (CAP) has been removed, since DEQ approved the I&I CAP for this facility (conditional approval granted 2/21/2012 – see <b>Attachment L</b> ). The I&I annual progress reports will still need to be submitted due to monthly average flows continually exceeding 95% of the existing design capacity.
I.C.17	I.C.17	Pretreatment Program	No changes.

Table 8: Changes to Part II – Conditions Applicable to All Permits

From	To	Condition Changed	Reason for Change
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From	To	Condition Changed	Reason for Change
II.A	II.A	Monitoring	Updated language per GM14-2003.
II.C.3	--	Reporting Monitoring Results (#3)	Part II.C.3 language removed per GM14-2003.
II.C.4	II.C.3	Reporting Monitoring Results (#4)	Part II.C.4 becomes Part II.C.3 (numerically) due to removal of previous Part II.C.3.
II.I.3	II.I.3	Reports of Noncompliance	Revised to reflect new PRO Regional Office reporting protocol adopted January 8, 2014.

22. Variances/Alternate Limits or Conditions: None.

23. Regulation of Users: 9VAC25-31-280 B 9: Not applicable, this facility is a POTW.

24. Public Notice Information required by 9VAC25-31-280 B:

Publishing Newspaper: *The Sussex-Surry Dispatch*  
 Comment period: 5/25/2016 – 6/27/2016  
 Date of first publication: 5/25/2016  
 Date of second publication: 6/1/2016

All pertinent information is on file and may be inspected and copied by contacting Adam Eller at:

Virginia DEQ-Piedmont Regional Office  
 4949-A Cox Road  
 Glen Allen VA 23060  
 Telephone: (804) 527-5046  
 E-mail: [Adam.Eller@deq.virginia.gov](mailto:Adam.Eller@deq.virginia.gov)

#### HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING:

DEQ accepts comments and requests for public hearing by e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant, based on individual requests for a public hearing, and there are substantial, disputed issues relevant to the permit.

25. Additional Comments:

a. Previous Board Action: None

b. Staff Comments:

(1) Planning conformance statement: The discharge is in conformance with the existing planning documents for the area.

- (2) Controversial Permit Assessment: This permit is not expected to be controversial.
- (3) Fees: Permit maintenance fees are up to date, last paid on 10/1/2015.
- (4) e-DMR Participation: The facility participates in the e-DMR program as of 4/28/2006.
- (5) Virginia Environmental Excellence Program (VEEP) Participation: The facility is not enrolled in the VEEP program.
- (6) Effluent Monitoring Reductions: Reduced monitoring was not considered for the reissuance due to the issuance of at least one warning letter or NOV within the last three years; additionally, reduced monitoring is not deemed appropriate due to confirmed presence of threatened and endangered species in the receiving stream.
- (7) General Permit Registration:
  - There are no VPDES General Permits associated with this facility.
  - This facility is not subject to coverage under 9 VAC 25-151 General VPDES Permit for Discharges of Storm Water Associated with Industrial Activity (Sector T) due to a design flow of less than 1.0 MGD.
  - The facility does not discharge into the Chesapeake Bay Watershed and is not required to register for the Watershed General Permit for Nutrient Dischargers to the Chesapeake Bay.
- (8) A CTO for facility upgrades (mechanical aerators) was issued 7/3/2014. See **Attachment K**.
- (9) Financial Assurance: Financial assurance does not apply to this facility because it is a publicly owned treatment works.
- (10) Local Government and Riparian Landowners were notified of the proposed expansion to 0.060 MGD on 2/17/2016. See **Attachment J**.

c. Other Agency Comments:

- (1) EPA comments: EPA has categorically waived the right to comment on draft permits for minor, municipal facilities that do not include limits to comply with a TMDL other than those for bacteria TMDLs. This facility is not addressed in any EPA approved TMDL nor does it discharge to a receiving stream or watershed with an EPA approved TMDL; therefore, EPA review is not required.
- (2) VDH comments: In a memorandum dated 11/13/2015, VDH-ODW stated that "One public raw water intake in Virginia, for the City of Norfolk Waterworks, was found 53.4 miles downstream from the discharge point/area. Since this is greater than 5 miles, we find no impact from this discharge on this intake." See **Attachment H**.
- (3) Threatened and Endangered (T&E) Species Coordination: As required by the 2007 Memorandum of Understanding (MOU) between VDEQ, VDGIF, VDCR, and USFWS, a threatened and endangered species screening was conducted for this permit reissuance. The T&E review was performed in accordance with GM 07-2007. The facility was on the 2016 Threatened and Endangered Species Coordination list and a request for review was submitted to DCR, DGIF and USFWS.

The T&E species screening was conducted using VaFWIS's Search Report for aquatic species. The screening revealed the following confirmed hits within a two mile radius of the outfall:

Table 9: T&E Species Screening Results:

Species	Stream Name	Federal Endangered	Sate Endangered	State Threatened
Logperch, Roanoke	Nottoway River, Stony Creek	X	X	
Wedgemussel, dwarf	Nottoway River	X	X	
Pigtoe, Atlantic	Nottoway River			X

A response from DCR was received on 12/21/2015 (see **Attachment I**) which recommended the use of UV/ozone to replace chlorination and utilization of new technologies as they become available to improve water quality. DCR also recommended adoption of EPA ammonia limits to be protective of mussels, as well as coordination with VDGIF and USFWS.

A response from DGIF was received on 3/18/2016 (see **Attachment I**) recommending UV/ozone to replace chlorination and EPA ammonia limits to be protective of freshwater mussels.

A response from USFWS was received on 12/17/2015 (see **Attachment I**) recommending UV/ozone to replace chlorination and EPA ammonia limits to be protective of freshwater mussels.

DEQ has advised the permittee of the concerns from DCR, DGIF and USFWS regarding the use of UV disinfection rather than chlorination and has asked that the owner consider this as part of the proposed facility expansion/upgrade to 0.060 MGD. DEQ has not forced existing sewage treatment plants to retro-fit with UV disinfection equipment, as proper chlorine disinfection followed by dechlorination has been proven effective for meeting currently approved WQS criteria. The existing 0.040 MGD facility includes both tablet chlorination and dechlorination, and will be required to maintain a monthly average TRC effluent concentration of 0.064 mg/L or less and a weekly average of 0.079 mg/L or less. If chlorine is the chosen disinfection method for the future 0.060 MGD treatment works, it will be required to maintain a monthly average TRC effluent concentration of 0.042 mg/L or less and a weekly average of 0.047 mg/L or less. These numeric TRC effluent concentrations are established to maintain aquatic life beyond the allocated mixing zone. The effluent limitations in this permit are designed to be protective against aquatic toxicity and are in conformance with the WQS. A reasonable potential analysis for ammonia was performed as part of this reissuance and no limit was required to be protective of water quality (see **Attachment E**). Existing ammonia criteria are established to meet the requirement of 9VAC25-260-20. Revised federal ammonia criteria are expected to be properly addressed as part of the WQS triennial review process. Following that regular review process, any adopted revisions to the WQS regulation will be incorporated in future permit actions.

- d. Owner Comments: See **Attachment M** for owner comments and DEQ response to comments.
- e. Public Notice comments: **TBD**
- f. Local Government Notification of Public Notice: Local government officials were notified of the public comment period on 5/18/2016. In accordance with the Code of Virginia



§62.1-44.15:01, the following individuals received the notification: Deborah A. Davis, Sussex County Administrator; Franklin R. Jackson, Jr., Stony Creek Town Mayor; and Dennis Morris, Executive Director, Crater Planning District Commission.

**Fact Sheet Attachments:**

- A Topographic Map
- B Flow Diagram
- C Ambient Stream Data, Flow Frequency Memorandum, 303(d) Fact Sheets 1989 Stream Sanitation Analysis, and 2004 Stream Sanitation Analysis
- D Effluent Data (Provided on Monthly DMRs, the 2015 Reissuance Application (EPA Form 2A) and the 2012 Attachment A Water Quality Monitoring Criteria Form
- E Effluent Limitations Analyses for the 0.040 MGD and 0.060 MGD Flow Tiers (Including MSTRANTI Data Source Report, MIX.exe, MSTRANTI WLAs, and STATS.exe Printouts)
- F Groundwater Monitoring Data Analysis Report
- G 2016 Site Visit Report
- H VDH Comments
- I Threatened and Endangered Species Coordination (Including VaFWIS Search Report and Comments from DCR, DGIF and USFWS)
- J Local Government and Riparian Landowner Notifications
- K CTO for Stony Creek WWTP Improvements (Mechanical Aerators)
- L I&I CAP Conditional Approval (2012)
- M Owner Comments and DEQ Response to Owner Comments